BACKGROUND

Structure of the Report

The Report consists of two volumes.

Volume I - Report Body consists of the following Chapters:

Chapter 1 – Background	Provides report structure descriptions, acknowledgements, and list of abbreviations.
Chapter 2 – Objectives and Methodology	Overview of major project objectives. Methodologies on data acquisition, demand forecast, system reliability, optimization modeling, and investment planning.
Chapter 3 – System Overview	Description of existing system including hydro, thermal, nuclear, and renewable resources. Evaluation of existing facilities and rehabilitation projects.
Chapter 4 – Electricity Demand Forecast	In-depth evaluation of Armenian economy, methodology of forecast development, forecasting results, comparisons to other international institutions and ERC forecasting.
Chapter 5 – Fossil Fuel Analysis	Evaluation of historical and forecasted trends for natural gas, mazut, and coal. Recommendations on alternative fossil fuel supply options.
Chapter 6 – Demand Side Management	Evaluation of DSM and energy efficiency potential for Armenia
Chapter 7 – Study Scenarios and System Reliability	Presentation of least-cost and strategic case matrixes with definitions. Reliability analysis of Armenian energy system.
Chapter 8 – Expansion Options	Incudes discussion on re-powering and new generation expansion options. Screening analysis of all options.
Chapter 9 – IPM Modeling Results	Analysis of modeling results.

Chapter 10 – Investment Plan   Capital investment requirements for both economic and
                                     strategic base cases.

Chapter 11 – Conclusions and   Summary of all major conclusions and recommendations of
Recommendations   this study.

Volume II - Appendixes consists of the following titles:

Appendix A – IPM Runs   Detailed summary of modeling results
Appendix B – IPM Model   Description of model flow chart, methodology, and
Overview   structure
Appendix C – Coal   Includes an independent coal assessment report
Investigation
Appendix D – Hydro Tunnel   Includes an independent investigation of Vorotan-Arpa
Investigation   tunnel construction

List of Abbreviations

AGP   ArmGasProject
ANPP   Armenian Nuclear Power Plant at Metzamor
B&R   Burns and Roe Enterprises, Inc.
Block   Condensing Unit
CC   Combined Cycle
CC CHP   Combined Cycle Combined Heat and Power
CFB   Circulating Fluidized Bed
CFL   Compact Fluorescent Light
CHP   Combined Heat and Power
DH   District Heating
Disco   Distribution company
DSM   Demand-Side Management
EBRD   European Bank for Reconstruction and Development
ERC   Energy Regulatory Commission
EU   European Union
FOB   Free on Board
FOR   Forced Outage Rate
GAN   Gosatomnadzor, Russian nuclear regulatory body
GDP   Gross Domestic Product
GEF   Global Environmental Facility
GOST   State Standard (developed in USSR)
GT   Gas Turbine
Harza   Harza Engineering Co.
HB   Hagler Bailly Services
HPP   Hydro Power Plant
HV   High Voltage
ICF   International Finance Corporation

IDC	Interest During Construction
IEA	International Energy Administration
IPM™	Integrated Planning Model by ICF Consulting
IPP	Independent Power Producer
LCGP	Least-Cost Generation Plan
LOLP	Loss-of-Load Probability
MoE	Ministry of Energy
MoF	Ministry of Finance
MoI	Ministry of Industry
MoS	Ministry of Statistics
MT	Metric Ton
MW	Megawatt
NPP	Nuclear Power Plant
NPV	Net Present Value
O&M	Operations and Maintenance
OECD	Organization for Economic Cooperation and Development
POR	Planned Outage Rate
RM	Reserve Margin
$/MW-yr	$/MW*yr, dollar per Megawatt per year
SCJSC	State Closed Joint Stock Company
TPP	Thermal Power Plant
UNDP	United Nations Development Program
USAID	U.S. Agency for International Development
USGS	U.S. Geological Survey
USSR	Union of Soviet Socialist Republics
VAT	Value Added Tax
VVER	Pressurized Water Reactor

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